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ABSTRACT

Four questions guided this study of 11 noisy and/or overactive preschool boys: (1) Would children considered to be at risk for later diagnosis be more overactive than children who were not considered at risk? (2) How might parent/child social interchanges be categorized in a preschool population? (3) Would parent/child social interchanges be different for at risk children than they would be for controls? and, (4) Would parents in general attend more to noise than to overactive behaviors? To explore these questions, parents were observed for 30 minutes for indications of positive, negative, or unattending social interactions with their child. Note was taken of the child's appropriate or inappropriate motor activity. The child's negative, positive, or unattending social responses to the parent, as well as nonconversational sound made by the child, were noted. Selected from the same preschool population, 11 control subjects and their parents also were observed. Results indicated that the experimental children behaved no more inappropriately than did controls. Parents who were positive to their children tended to have children who were positive to them; inattentive parents tended to have inattentive children. Control parents and children were significantly more positive toward each other than were experimental parents. Experimental parents and children were significantly more inattentive than were controls. All parents were quite attuned to their children's noisy behavior. (Implications for hyperactivity research are pointed out.) (RH)

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Social Interactions of Preschool Hyperactive Boys

Elizabeth D. Brown

A bleak future may be in store for many children who are considered to be hyperactive. Indeed, one 1974 longitudinal study indicated that as many as one-third of the hyperactive population was either hospitalized or institutionalized for delinquent behavior by late adolescence (Huessy, Metoyer, & Townsend, 1974.) This rate is twenty times in excess of what would normally be expected for a non-diagnosed population. Two books have come out recently that suggest directions for producing more favorable outcomes for hyperactive children. From Ross & Ross (1976), we learn that treatments might be more effective if they were directed towards preschoolers. However, Whalen & Henker's (1980) set of readings introduces a note of caution into the idea of early intervention: 1) At present, not enough is known about the natural activities of preschoolers to select out at-risk children for treatment; and, 2), social-ecological factors, such as environmental demands and social agents' reactions to hyperactivity-associated behaviors need examination in order both to gain a better understanding of hyperactivity and to design more effective interventions for it.

Both of these problems emerged in a set of studies conducted on preschoolers by Schleifer, Campbell, and their associates (Campbell, Endman, & Bernfield, 1977; Campbell, Schleifer, Weiss, & Perlman, 1977; Schleifer, Weiss, Cohen, Elman, Cvejic, & Kruger, 1975.) During the preschool years, the children they considered to be truly hyperative appeared more impaired on behavioral and cognitive measures than did other children who were described as "situationally hyperactive." But parents of these two groups did not distinguish between them behaviorally, for situationally hyperactive children were rated just as problematic as were true hyperactive. However, once the children entered elementary school, other social agents, namely the teachers, agreed with the parents about the troublesome nature of the situational hyperactives'

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behavior.

In a recently reported study, the present author examined the relationship between parent reports of hyperactivity-associated behaviors to classroom observations of 104 nondiagnosed preschool boys (Brown, in review.) Children described as overactive by their parents were no more active as a group than were children whose parents did not give a high activity rating. Instead, children described as very active were more vocally noisy during structured class times (times when children were expected to be quiet.) One explanation for this is that children who are vocally noisy might attract more parents' attention, thus leading them to see more behavior in general. This hypothesis was supported by finding that teachers also tend to intervene more often when children were being noisy than when they were being active (Brown, 1982.) A two-year follow-up of children in this study found that of the seven boys who were rated highest by parents on activity and who were the noisiest in class, five had been diagnosed as hyperactive.

From this research, it appears that investigations of the social interactions of parents and their hyperactive children may yield valuable information. And yet, social interaction studies of this nature have received almost no attention by hyperactivity researchers. Only three reports dealing with hyperactive children's social interactions have been uncovered, and none of these has dealt with the preschool population. Two of the studies suggested that mothers of hyperactive school-aged children become more involved when their children are assigned difficult tasks (Campbell, 1973,1975.) However, Campbell's data were gathered in a contrived situation. Also the independent, although simultaneous, recording of the behaviors may have concealed information about actual social interaction. The third study, reported by Cunningham

& Barkley (1979), used an interactional perspective to examine the social interactions of mothers and their school-aged children in a free play setting. Here, mothers of non-diagnosed children initiated significantly more social interactions with their children than did mothers of hyperactives. Moreover, the control mothers encouraged significantly more independent play by praising or questioning their children. On the other hand, mothers of hyperactive children made significantly more attempts to control the children's play or to redirect it.

The present study was to determine the types of social interaction engaged in by preschoolers and their parents and to answer questions remaining from my own field research. Four questions guided the study: 1) Would children considered to be at-risk for later diagnosis be more overactive than children who were not considered at risk? 2) How might parent-child social interchanges be categorized in a pre-school population? 3) Would parent-child social interchanges be different for at-risk children than they would be for controls? 4) Would parents in general attend more to noise than to overactive behaviors?

Children who took part in the study were selected from the preschool population that provided the data for the earlier discussed field research. The experimental group consisted of 11 boys, who were selected on the basis different criteria: seven of these boys were among the noisiest children in the preschool population and were among the children rated as most active by parents[1], two boys were high on the noise variable, but not on parentally rated overactivity; and the remaining two children were high on the parent rating, but not on classroom noise. The control group, also consisting of 11 boys was randomly selected from the preschool population.

In order to reduce the potential for experimental bias, a double-blind procedure was used in which neither the parents not the observers knew that some children were considered to be at-risk for later diagnosis as hyperactive. The order in which observations were scheduled was randomly determined.

When the primary caregiving parent and her/his child arrived at the University clinic where observations were performed, they were asked to remain alone in a room furnished with sofas and chairs. They were not, at that point, told that they were being observed. However, a full debriefing took place following the observation and each parent agreed to allow the data to be used.

During the 30 minute observational period, parents were observed for positive, negative, or unattending social interactions with the child. Note was taken of the child's appropriate or inappropriate motor activity, with the latter defined as more disruptive behavior. The child's negative, positive, or unattending social responses to the parent were also recorded. An additional category for scoring non-conversational sound by the child was included.[2]

Behavioral chains were observed for ten seconds and recorded during the next ten seconds. In order to enhance inter-rater reliability, tape recorders were used to alert observers to the beginning and end of each recording segment. Two raters were used for every observation. Since the interaction effects of the parents and their children were critical to the study, reliability was calculated on total agreement, i.e., for each segment, the raters had to agree on the type of social behavior engaged in by the parent, the type of social behavior engaged in by the child, and the type of physical behavior performed by the child. The reliability, computed by dividing the number of agreements by the sum of agreements and disagreements, was quite high ($M = .93$, s.d. $= .06$.)

A two-tailed t-test suggested that the experimental children behaved no more inappropriately than did controls ($t = -.12$, n.s.) In the 60 recording segments, experimental children had behaved inappropriately, on the average, during eight frames (s.d. = 7.9), while control children had been inappropriate, on the average, during 13 frames (s.d. = 13.0.)

Considerable reciprocity was found for two types of parent-child social interchanges for the entire sample: Parents who were positive to their children tended to have children who were in turn positive to the parent ($r = .83$, $p \leq .001$); parents who were inattentive to their children tended to have children who were in turn inattentive to the parent ($r = .90$, $p \leq .001$.) No significant relationship was found between parents' and children's negative social behaviors ($r = .12$, n.s.)

Two-tailed t-tests, with separate variance estimates used because of heterogeneity of variance, showed that control parents were significantly more positive to their children than were experimental parents ($t = 2.92$, $p \leq .01$), while experimental parents were significantly more inattentive than were controls ($t = 2.53$, $p \leq .05$.) The reciprocity pattern again appeared, with control children being in turn significantly more positive to their parents than were experimental children ($t = 2.49$, $p \leq .05$), while experimental children were significantly more inattentive ($t = 2.32$, $p \leq .05$.)

Data showed that parents for the entire sample were quite attuned to the children's noisy behavior ($r = .84$, $p \leq .001$.) This tendency was maintained when partial correlations were used to control for the co-existence of children's inappropriate behavior ($r = .82$, $p \leq .001$) and for the fact that the experimental children had been selected out partially because of their noisy behavior (partialling out the experimental condition and the inappropriate behavior reduced the coefficient to .80, $p \leq .001$.)

The data suggest several important considerations for hyperactivity researchers. For one, children's noise does appear to draw more parental negative attention than does their inappropriate behavior. Since, as I previously mentioned, children at risk for hyperactivity appear to be more noisy (Brown, in review), it may be that their parents more often do react negatively. The present study was not designed to address the reason for the noisy behavior. No determination can be made if the noise is a signal that something is amiss with the child, or if the continuing negative attention he may expect from his parent will feed into a negative spiral. In any case, more attention from researchers to the noise variable, and less to the amount of motor activity, appears to be warranted.

The results from the parent-child social interchanges also have meaning for understanding the social world of preschoolers who may later be diagnosed. These youngsters are more likely to live in a parallel world with their parents, with both the parent and child engaging in significantly fewer social interchanges than do normal controls. Normal controls, on the other hand, not only are more socially involved, but the types of social interchanges between these boys and their parents are more positive in nature.

While the present study provides some information about preschoolers at-risk for a hyperactivity diagnosis, its greater value may in in the intriguing questions that it raises, but cannot answer. Are children who are at-risk for later diagnosis more noisy because that is the way that they can attract their parent's attention? After all, negative attention may be preferred over no attention. If the noisy behavior on the part of the children is some signal of cognitive immaturity (a way that hyperactive children are often described), are they more immature because they lack the social stimulation from their parents? Are parents more inattentive to at-risk children

because these children's high noise level wears the parent out? Are children more inattentive to their parent because they are not reinforced for socially positive behavior? Does the fact that these children more often fail to attend to their social environment feed into their oft-cited failure to weigh environmental demands? Answers to some of these questions may open the door to effective intervention strategies for the preschool population.

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Footnotes

1. A two year follow-up of the children reported on in this study showed that, of the six boys high on both criteria who could be found, five had been diagnosed as hyperactive during the first year of elementary school.

2. In order to record the interchanges, the observers would first note the parent's social behavior, then the child's motor behavior, and finally the child's social behavior. Thus, if a parent was approving a child who was behaving inappropriately and not attending to the parent, the observer would have scored as follows:

Parent:	+		-		0	
1	A	S	A	S	A	S
	I	O S	I	S	I	S

If the child was also being noisy, a slash would have been placed through the S.

Operational definitions used in parent child clinic observation

Page 1 - Parent social behaviors

Parent-Child Clinic Observation

Parent

\+ Praise
Smiling
Hugging
Kissing
Holding child on lap
Picking child up to facilitate his movements
Picking child up to caress him
Playing with child
Verbal acknowledgement of child
Any positive physical interaction
Verbal response to question
Physical response to question (if nodding or shaking head, must be accompanied by looking at child)
Laughing with child
Making noises or singing to entertain child
Reading to child

\- Any verbalization or physical behavior geared toward stopping a child's behavior or directing a child to an incompatible behavior. Any behavior directed at environmental change to prohibit a child's behavior.

Scolding
Telling child to stop
Voicing disapproval of child or his behavior
Spanking or slapping
Holding child to keep his from behavior (must be the specific behavior which the parent wanted stopped)
Moving things to keep from the child's reach
Taking something away from the child

0 None of the above. This is a measure of parental non-involvement and includes such parental behaviors as nodding while not looking at the child.

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Operational definitions used in parent child clinic observation
Page 2 - Child appropriate/inappropriate behaviors.

Child

Motor - Appropriate

Standing
Sitting without kicking or rocking movement
Walking
Lying on floor in a semi-reclining position
Sitting on floor in a semi-reclining position
Change from a standing to a sitting position (to qualify as sitting, buttocks must be in contact with the seat, floor or legs and feet if sitting with legs tucked under him.)
Change from a lying to a sitting position
Squatting
Stooping to pick up a dropped object
Rising to a standing position
Accidental fall

Motor - Inappropriate

Running
Hopping
Skipping
Jumping
Rolling
Throwing objects (unless scorable under social)
Crawling
Creeping
Putting feet on object other than own chair
Climbing
Whirling
Pulling objects with noise lasting four seconds or less
Pushing objects with noise lasting four seconds or less
Rocking in a non-rocking chair, on floor or on feet
Moving chair unless he sits in it within two seconds after completing
Standing on all fours
Walking on knees
Whirling head
Shifting, while seated, which involves a change of location
Shifting, while seated, which results in at least a 90 degree turn of body
Opening door to leave room
Leaving room

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Operational definition used in parent child clinic observation
Page 3 - Child social and sound behaviors

Child

Social - Positive

Hugging or kissing parent
Climbing on parent's lap
Conversing with parent
Answering questions
Smiling at parent
Laughing with parent
Any positive physical interaction
Verbal interaction of a positive nature (i.e., I love you.)
Responding to parental command.

Social - Negative

Hitting parent
Not responding to parent question
Ignoring parent's verbalizations (if responding physically and verbally at the same time, both must be positive to be scored under Social-Positive. If one differs from the other, score here under Social-Negative.)
Grabbing objects from parent.
Knocking parent's belongings off table or chair
Kicking parent
Pinching parent
Slapping parent
Spitting at parent or on her materials
Striking parent with objects
Throwing objects at parent
Poking parent with object
Biting
Pulling hair
Any attempt to perform any behavior listed above.

Do not score accidental occurrences of the above.

Sound

Noise made by pushing or pulling objects if it persists at least four seconds.
Slamming objects.
Clapping hands
Tapping objects
Tapping or kicking feet
Rattling or tearing paper
Whistling
Shouting
Making non-verbal noise
Singing (unless initiated by parent)
Crying (unless hurt in accident)

Do not score:
Noise made by accidently dropping an object
Noise made in performance of Motor activity
Noise lasting less than four seconds if resulting from pushing or pulling

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Scoring form used in parent child clinic observation

RATING OF PARENT AND CHILD

Frame	+		-		0	
	+/-		+/-		+/-	
1	A	S	A	S	A	S
	I	S	I	S	I	S
2	A	S	A	S	A	S
	I	S	I	S	I	S
3	A	S	A	S	A	S
	I	S	I	S	I	S
4	A	S	A	S	A	S
	I	S	I	S	I	S
5	A	S	A	S	A	S
	I	S	I	S	I	S
6	A	S	A	S	A	S
	I	S	I	S	I	S
7	A	S	A	S	A	S
	I	S	I	S	I	S
8	A	S	A	S	A	S
	I	S	I	S	I	S
9	A	S	A	S	A	S
	I	S	I	S	I	S
10	A	S	A	S	A	S
	I	S	I	S	I	S
11	A	S	A	S	A	S
	I	S	I	S	I	S
12	A	S	A	S	A	S
	I	S	I	S	I	S
13	A	S	A	S	A	S
	I	S	I	S	I	S
14	A	S	A	S	A	S
	I	S	I	S	I	S
15	A	S	A	S	A	S
	I	S	I	S	I	S
16	A	S	A	S	A	S
	I	S	I	S	I	S
17	A	S	A	S	A	S
	I	S	I	S	I	S
18	A	S	A	S	A	S
	I	S	I	S	I	S
19	A	S	A	S	A	S
	I	S	I	S	I	S
20	A	S	A	S	A	S
	I	S	I	S	I	S

Frame	+		-		0	
	+/-		+/-		+/-	
21	A	S	A	S	A	S
	I	S	I	S	I	S
22	A	S	A	S	A	S
	I	S	I	S	I	S
23	A	S	A	S	A	S
	I	S	I	S	I	S
24	A	S	A	S	A	S
	I	S	I	S	I	S
25	A	S	A	S	A	S
	I	S	I	S	I	S
26	A	S	A	S	A	S
	I	S	I	S	I	S
27	A	S	A	S	A	S
	I	S	I	S	I	S
28	A	S	A	S	A	S
	I	S	I	S	I	S
29	A	S	A	S	A	S
	I	S	I	S	I	S
30	A	S	A	S	A	S
	I	S	I	S	I	S
31	A	S	A	S	A	S
	I	S	I	S	I	S
32	A	S	A	S	A	S
	I	S	I	S	I	S
33	A	S	A	S	A	S
	I	S	I	S	I	S
34	A	S	A	S	A	S
	I	S	I	S	I	S
35	A	S	A	S	A	S
	I	S	I	S	I	S
36	A	S	A	S	A	S
	I	S	I	S	I	S
37	A	S	A	S	A	S
	I	S	I	S	I	S
38	A	S	A	S	A	S
	I	S	I	S	I	S
39	A	S	A	S	A	S
	I	S	I	S	I	S
40	A	S	A	S	A	S
	I	S	I	S	I	S

Frame	+		-		0	
	+/-		+/-		+/-	
41	A	S	A	S	A	S
	I	S	I	S	I	S
42	A	S	A	S	A	S
	I	S	I	S	I	S
43	A	S	A	S	A	S
	I	S	I	S	I	S
44	A	S	A	S	A	S
	I	S	I	S	I	S
45	A	S	A	S	A	S
	I	S	I	S	I	S
46	A	S	A	S	A	S
	I	S	I	S	I	S
47	A	S	A	S	A	S
	I	S	I	S	I	S
48	A	S	A	S	A	S
	I	S	I	S	I	S
49	A	S	A	S	A	S
	I	S	I	S	I	S
50	A	S	A	S	A	S
	I	S	I	S	I	S
51	A	S	A	S	A	S
	I	S	I	S	I	S
52	A	S	A	S	A	S
	I	S	I	S	I	S
53	A	S	A	S	A	S
	I	S	I	S	I	S
54	A	S	A	S	A	S
	I	S	I	S	I	S
55	A	S	A	S	A	S
	I	S	I	S	I	S
56	A	S	A	S	A	S
	I	S	I	S	I	S
57	A	S	A	S	A	S
	I	S	I	S	I	S
58	A	S	A	S	A	S
	I	S	I	S	I	S
59	A	S	A	S	A	S
	I	S	I	S	I	S
60	A	S	A	S	A	S
	I	S	I	S	I	S

Parent:
- \+ Positive parental attention
- \- Negative parental attention
- 0 Parental inattention

Child - Motor:
- A Appropriate
- I Inappropriate

Child - Social and Sound:
- \+ Positive Social
- \- Negative Social
- S Sound

Child's Name_____ Date_____

Rater_____ Time of observation_____

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